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CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society
Of America

Vol. XIII SEPTEMBER, 1941 No. 9

FIG. 82. WHO'S WHO
Alain White, and niece, at his winter home in South Carolina where he has just completed a monograph on Euphorbias.

CACTUS AND SUCCULENT JOURNAL

Published and Owned by the Cactus and Succulent Society of America, Inc., Box 101, Pasadena, California. A monthly magazine to promote the Society and devoted to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and study of these particular plants may attain the popularity which is justly theirs. Subscription $3.00 per year. Foreign $3.00 per year by international money order. Membership in the Cactus Society free with subscription. Mail application to SCOTT HASELTON, *Editor*, Box 101, Pasadena, Calif. *Editorial Staff:* THE ENTIRE SOCIETY. Entered as Second Class Matter at Pasadena, Calif., under act of March 3, 1879.

Vol. XIII SEPTEMBER, 1941 No. 9

Variation in the Fruit of *Mammillaria microcarpa*.....R. H. Peebles 143
Sedum confusum Hemsley, Rediscovered.....Mrs. Ethel Rush 146
Cactus in the Attic.....Clarence L. Schmutzler 150
If You Care for Cactus.....Claire Norton 151
Succulent Articles.....Mrs. P. L. Akins 152
Six Rules for Beginners.....Cactus Exchange 154
Strange Facts—Aloe wart mite.....Frank Mark 155

PRESIDENT'S MESSAGE

There remain but three months in the fourth term I have served as President of the Cactus and Succulent Society of America, and even now as I write, the Nominating Committee is deliberating on the choice of a candidate for next year.

The Presidency has been an inspiring and delightful task but I intend now to shed the burden of office and devote my time to study and writing. As I will be busy for the next three months in reading proof and making last minute changes in the text of my forthcoming book, "Naming Cacti," I have asked Ervin Strong, the Vice President, to relieve me of all executive duties for the remainder of the term.

There are many factors in the understanding of xerophytic plants that have not been discussed during my incumbency, but our good Editor has promised me the space for their publication later. One factor, however, that of collected plants, is so important that I feel moved to discuss it here and now, even though in so doing I may antagonize some advertisers.

It has always been the policy of our Society to favor conservation of desert flora. Desert flora, however, cannot be conserved if plants are collected and shipped to buyers in large quantities. Therefore, I feel it my duty to warn you that the continued purchase of collected plants will eventually result in the eradication of many species. Already our own California *Bergerocactus Emoryi* has been eradicated.

In case the aforementioned objection will not deter you from purchasing collected plants, I shall advance a more weighty argument which will appeal to your pocketbook: *Plants collected on the desert will not survive in cultivation for any considerable length of time.* This fact, more than any ten other reasons combined, has caused potential collectors and possible future members of the Cactus and Succulent Society to lose interest. Cacti purchased in dime stores or from shippers of desert collected plants soon die.

On page 31 of "Cacti for the Amateur" a solemn warning is given and I wish to repeat it here.

In almost every instance plants collected in our deserts either do not re-root or root slightly and live for one, two, or possibly three years, on stored energy plus the little energy supplied by the new, weak roots, and then die.

In California we have brought the plants from our deserts to the lower, damper coastal plain and in some instances have kept them alive for a few years. But the change of climate resulted in loss of spine color, lack of flowers after the first year, and eventual death.

On the other hand, seedlings of the same species grown under glasshouse conditions by dealers, do retain spine coloration, do re-root and take nourishment, and live to flower gloriously for years.

True, students engaged in taxonomic work must have collected plants of authentic species from known locations for their determinations, and in most instances such plants must be purchased from field collectors. Few of us, however, are taxonomic specialists, and those of us who are, realize that the collected plants we purchase will surely die and we can hope only to keep them alive long enough to flower so as to enable us to make our needed notes.

Therefore I urge you, if not for the sake of aiding in the conservation of desert flora, then at least in your own interests, to buy seedlings that may live and not the collected plants which are surely fated to an early passing.

W. TAYLOR MARSHALL.

Regional Vice Presidents are asked to compile a list of private gardens in their districts, whose owners welcome visitors, and also of public gardens which feature xerophytic plants, together with the hours they are open to the public and the cost, if any, of admission. When complete, this list will be made available to our members.

NEW AFFILIATES

At the Executive Board meeting, Sept. 12, 1941, the two following groups were unanimously voted as affiliates of the Cactus and Succulent Society of America.

LONG BEACH CACTUS CLUB—Long Beach, California.

DESERT GARDEN CLUB OF TUCSON—Tucson, Arizona.

BOOK REVIEW

Part of Volume III. Anais da Premeira Reuniao Sul-Americana de Botanica. Catalogeo de las especies de Hariota y Rhipsalis Brasilenas. H. V. Le Long, A. Castellanos y P. Campos-Porto. Rio de Janeiro, Brazil, October, 1938.

The excellent revision of the genus Rhipsalis in Brazil, by Le Long, Castellanos and Campos-Porto, is now available to students as a separate publication in a pamphlet of 30 pages (without illustrations). If sufficient interest is shown, copies of the pamphlet (in Spanish) will be sent for by the JOURNAL. The price is not known.

Several new species and a number of new varieties are listed, and many of the species hertofore considered as distinct are united in this list. Unfortunately the pamphlet is written "ex cathedra" and no reasons are given for the numerous changes in taxonomy, a fact which is very confusing to this reviewer who wants a reasonable explanation for any shifting of species, even when done by botanists of such note as the authors of this work.

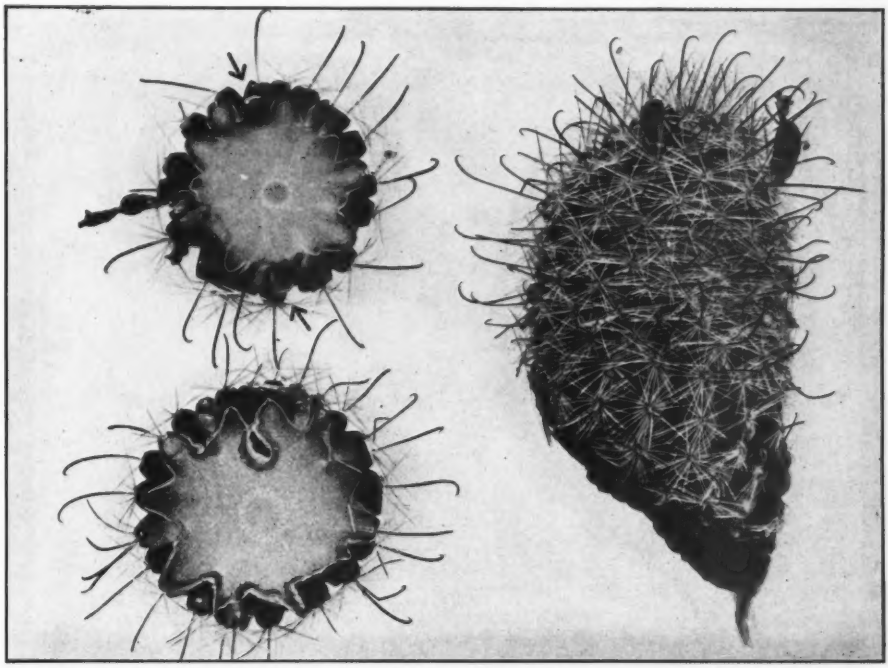

FIG. 83. Dimorphic berries in *Mammillaria microcarpa*. UPPER LEFT, cross-section of a stem showing 2 small green subglobose berries (indicated by arrows), the upper berry vertically sectioned to expose the black seeds. RIGHT, a stem 9 cm. long bearing 2 large scarlet berries. The cavity in the lower cross-section contained a few seeds, but it probably was caused through injury.

VARIATION IN THE FRUIT OF MAMMILLARIA MICROCARPA

By R. H. PEEBLES, *Bureau of Plant Industry*, Sacaton, Arizona.

The fruit of *Mammillaria microcarpa* Engelm. is correctly described by Britton and Rose[1] as "clavate, 2 to 2.5 cm. long, scarlet." The purpose of this article is to report that this species also produces numerous green subglobose berries that are no longer than the tubercles, more or less obscured by the spines, and consequently very inconspicuous.

Both types of the berry are illustrated above. The small green berries of the type shown in the cross-section of the stem greatly resemble tubercles, except for the lack of spines. A few berries of this kind turn more or less red at maturity and grow large enough to extend beyond the tubercles, but most of them remain green when mature and never project beyond the tubercles.

The small berries appear to remain on the plant for several years. When the pericarp finally disintegrates the seeds remain in little piles in the angles of the tubercles or cascade down the stem, evidently beyond the notice or reach of birds. It is the belief of the writer that the obscure berries are more effective in the reproduction of the species than the large conspicuous berries (Fig. 84), as a great many of the latter are destroyed by birds or rodents.

The flowering and fruiting habits of *M. microcarpa* should be investigated thoroughly before definite conclusions are drawn regarding the factors that are responsible for the development of two different types of berries, but in the meantime it may be conjectured that the small berries develop from late-season flowers. The small berries were first noticed November 18, 1940. At that time some of them contained black seeds that appeared to be mature, but in others the seeds were white and obviously immature. On the other hand, all of the large scarlet berries examined in November contained fully ripe seeds. By early February, few of the

[1]Britton, N. L., and Rose, J. N. The Cactaceae. Carnegie Inst. Wash. Publ. No. 248. 4:155. 1923.

FIG. 84. Two plants of *Mammillaria microcarpa* growing close together in the San Tan Mountains, Arizona. The berries that show in the photograph are of the large scarlet type. The presence of 2 berries of the small green type is betrayed by the withered perianths (indicated by arrows) exserted beyond the tubercles. November 21, 1940.

large scarlet berries remained on the plants, and all of the small berries contained ripe seeds, evidently having reached full maturity.

The observations were made in the vicinity of Sacaton, Arizona, on the form described by Britton and Rose (*ibid.* p. 156) under the name *Neomammillaria Milleri.* Although the fruit of *N. Milleri* is described as only 1.5 cm. long, many of the scarlet berries are 2 to 2.5 cm. long. Except for the large stems and stout spines, the form does not seem to differ materially from *M. microcarpa.* In the latter part of November, Dr. Lyman Benson very kindly examined some typical plants of *M. microcarpa* from the Santa Catalina Mountains, Arizona, and found that they also have "small green globose fruits with mature seeds as well as the larger elongate red fruits." The species was known for a great many years as *M. Grahami* Engelm. The reasons that are given by Britton and Rose (*ibid.* pp. 155-156) for adopting the name *M. microcarpa* apparently have been accepted, and the older name is now in general use. However, it is of interest to call attention to the fact that Engelmann[2] describes the fruit of *M. Grahami* as a "small oval berry, about half an inch long, apparently green when ripe."

Two other Arizona species of *Mammillaria,* both belonging to the group characterized by milky juice and not very closely related to *M. microcarpa,* have been observed to produce dimorphic berries, but in each case the writer's observation is limited to a single plant. The occurrence of dimorphic berries in these two species is mentioned by Benson[3], who has made independent observations on other collections, but nevertheless it seems worthwhile to quote the notes made by the present writer at the time his specimens were collected. The annotated herbarium sheets are filed in the herbarium of the United States Field Station, Sacaton, Arizona.

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[2]Engelmann, George. Cactaceae of the Boundary. Rep. U. S.-Mex. Bound. 2 (1): 179. 1859.

[3]Benson, Lyman. The Cacti of Arizona. Univ. Ariz. Biol. Bull. No. 5: 122, 124. 1940.

Mammillaria Heyderi Mühlenpfordt, hills near Bisbee, Cochise County, altitude 5,100 feet, SF 922, May 25, 1935. Fruit scarlet, clavate, slightly exceeding the tubercles or globose and green and half as long as the tubercles (the latter type from axils of older tubercles, which precludes the possibility of the small size being due to immaturity.)

Mammillaria Macdougalii Rose, north end of Perilla Mountains, Cochise County, altitude 4,400 feet, SF 1075, November 9, 1939. Ripe berries of 2 kinds: (1) green, globose, much shorter than the tubercles, and (2) crimson, clavate, about twice as long as the tubercles.

This discovery of dimorphic berries in 3 of the 7 Arizona species that are known to bear scarlet, crimson, or red berries leads to the supposition that the phenomenon may not be particularly uncommon in the red-fruited species of the genus *Mammillaria*. It is the hope of the writer that this article will stimulate interest that will lead to abundant observations along this line. Owing to the fact that cultivated cacti seldom function normally, it is desirable to examine the plants in their native surroundings whenever it is possible to do so.

EUPHORBIAS WANTED

My present interest lies in the Euphorbia family and I am writing to you to ask if you know where I might obtain some of the rarer varieties of these plants. I have written to several dealers who advertise in the JOURNAL but I thought that maybe some of your amateurs on the west coast might be in better position to supply my needs, either through sale or exchange.

Do you know any one who has Euphorbia seed for sale? The present war makes it impossible to obtain seed from Europe or South Africa.

JOHN R. DEAN, 71 Greenaway Road, Rochester, N. Y.

MIDWEST CACTUS AND SUCCULENT SOCIETY
Lorain, Ohio

At the election of officers held at the home of Mr. and Mrs. Walter A. Rutter, 780 W. Portage Path, Akron, Ohio, the following were elected for the year 1941-42:

President—Lewis M. Wahler (National Member). 48 Ennis Street, Bedford, Ohio.

Vice-President—E. J. Fish, Strongsville, Ohio.

Second Vice-President—W. R. Brookins, 239 East Washington Street, Medina, Ohio.

Secretary-Treasurer—John E. Rodgers, 1229—8th Street, Lorain, Ohio.

Program Chairman—E. J. Fish.

Publicity—Undecided at present.

JOHN E. RODGERS, *Secretary.*

CACTUS AND OTHER SUCCULENT LEAGUE
Oakland, California

The League cast an unanimous ballot at its September meeting for the following officers who will serve throughout the coming year:

W. C. Andrews of Oakland—*President.*

G. W. Van der Bundt of Antioch—*Vice-President*

J. S. Hastings of Albany—*Secretary.*

Frank Tyrrel of Oakland—*Treasurer.*

The speaker of the evening was Mr. Frank Tyrrel who presented a thoroughly enjoyable talk on the Coryphanthanae.

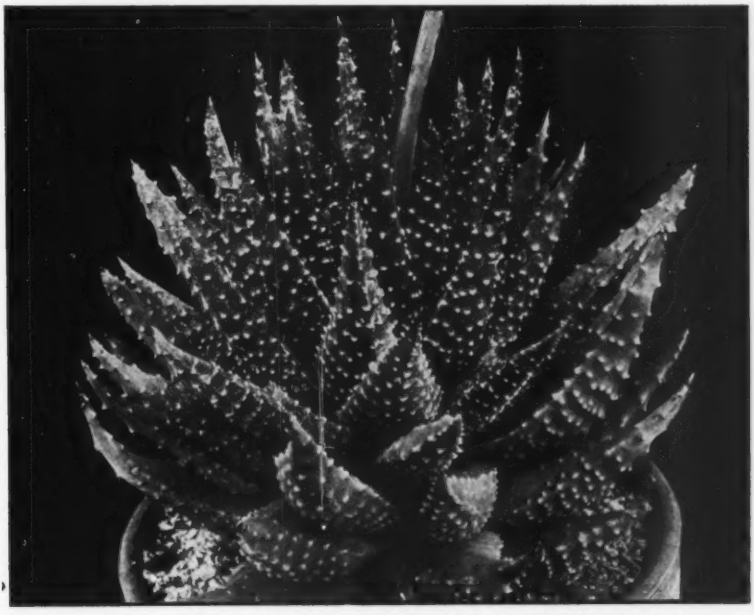

FIG. 85. *Haworthia margaritifera* (L.) Haw. greatly reduced. J. R. Brown photo.

Sedum confusum Hemsley, Rediscovered

By MRS. ETHEL RUSH
Photos by GEORGE OLIN

An interesting Sedum little known in our gardens, though quite likely still to be found in European collections, is *Sedum confusum* Hemsley. This plant was first described by Hemsley in 1878 from specimens found growing in English gardens under the label "*Sedum spathulifolium* Baker, non Hooker" which rather well described the foliage of this pretty and interesting little Sedum. Although Hemsley fails to mention the original place of collection, there seems to be reason enough to suppose its home to have been Mexico.

Throughout the years, the *Sedum confusum* that has been grown in our collections is certainly not the plant originally described by Hemsley.

In my own collection of Sedums there are two plants which I believe are the true *Sedum confusum* of Hemsley. One was raised from a cutting presented by Mr. Don B. Skinner and the other was obtained from the Cass Nursery of North San Diego. The latter plant was labelled "Sedum sp. from Orizaba, Mexico" but, unfortunately, no other information regarding it was available. These plants have been grown for two years or more, side by side in full sun, in the same soil, and they have been given identical care. Now after two years of close study and observation, I feel confident in stating that these are rediscovered specimens of the true *Sedum confusum* Hemsley.

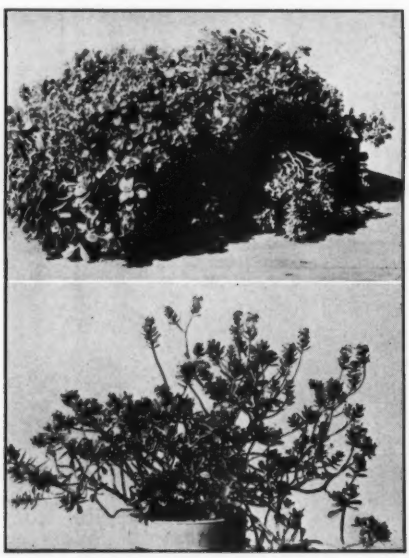

FIG. 86. Top photo shows the plant erroneously known as *Sedum confusum* while the lower photo shows the true *S. confusum* Hemsley.

Britton and Rose, in their treatment of Sedum in North American Flora, give a short description of *Sedum confusum* Hemsley, and Berger also describes it in his work on Crassulaceae. Both these authorities, however, are rather vague and much too brief to be of any great help in arriving at definite conclusions regarding Hemsley's plant. My observations and conclusions have been based largely on the description and comments given by Dr. R. Lloyd Praeger in his very adequate "Account of the Genus Sedum as found in Cultivation" which includes the following topics, and from which I quote:

Sedum confusum Hemsley

S. confusum Hemsley, "Diagnoses Plant. Nov.," 1, 10, 1878. Hemsley, "Biol. Centr. Amer., Bot.," 1, 393. "N. Amer. Flora," 22, 70.

ILLUSTRATION—Saunders' "Refug. Botan.," 5, pl. 337.

SYNONYM—*S. spathulifolium* Baker in Saunders' "Refug. Botan.," loc. cit. (not of Hooker).

Description: A glabrous, evergreen, shrubby perennial, forming a bush a foot high and wide. Stem woody below, round, smooth, often reddish, much branched; branches ascending. Leaves alternate, longer than the internodes, flat, fleshy, bright green, shining, obovate-spathulate, 1 to 1½ inches long, usually semi-elliptic at apex (sometimes with a very blunt point), cuneate below, sessile, face with a median V-shaped groove with well-marked edges near the base, back paler with a slightly raised median ridge. Inflorescence terminal, compact, 1½ to 2 inches long and broad, cymose-paniculate; bracts linear, very fleshy, few. Buds ovate, bluntly pointed. Flowers yellow, ½ to ⅝ inch across, on very short pedicels (1/16 to ⅛ inch). Sepals yellowish green, very fleshy, ovate, blunt, nearly twice as long as broad, limb exceeding the tube. Petals patent or reflexed, ovate-lanceolate, acute, channelled, 3-times as long as broad. Stamens yellow, ⅘ the petals. Scales small, roundish, notched, yellow. Carpels lanceoate, greenish

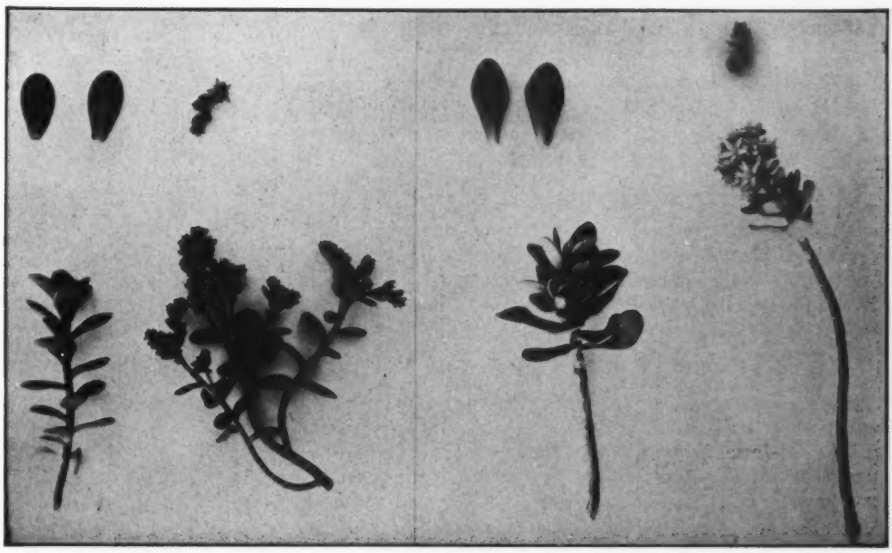

FIG. 87. LEFT: Plant erroneously grown in American gardens as *Sedum confusum*. RIGHT: *Sedum confusum* Hemsley.

FIG. 88. LEFT: Plant erroneously grown in American gardens as *Sedum confusum*. RIGHT: *Sedum confusum* Hemsley.

yellow, slightly spreading, with short, erect styles; wide-spreading in fruit.

Habitat: Not certainly known but undoubtedly Mexico. This is the third member of the well marked *dendroideum* group of shrubby Mexican Sedums. *Sedum confusum* is the smallest of the three and differs from *S. praealtum* in its smaller, broader leaves, 1 to 1½ inches (not 2 to 2½ inches) long, twice (not 3 or 4 times) as long as broad, semi-elliptic (not pointed) at the apex, inflorescence smaller and denser (about 2 inches instead of 4 inches long and broad), petals broader (3, not 4 times as long as broad). *S. dendroideum* differs in its taller, stiffer growth, stalked leaves, etc.

Froderstrom in his monograph of the genus Sedum includes *Sedum confusum* Hemsley in the Dendroideum group, a group of fourteen Mexican species which includes *Sedum dendroideum* Moc. & Sesse, *S. praealtum* A. DC., and *Sedum confusum* Hemsley. While Froderstrom agrees with Britton and Rose that *Sedum praealtum* A. DC. is identical with *S. dendroideum* Moc. & Sesse, he keys the three species as follows: "The stamens are short and the petals oblong in *S. dendroideum;* the petals are oblong and 4 to 5 mm. long in *S. confusum;* and lanceolate and 5 to 8 mm. long in *S. praealtum* and both these species have stamens equalling the petals."

The accompanying photographs will, perhaps, serve to support my assumption that *Sedum confusum* Hemsley has been re-discovered and that the plant masquerading under that name in our gardens is quite wrongly named. This at least is my opinion as an amateur, based on much study and close observation and any discussion is invited from those who may disagree with me in my conclusions.

Having submitted this with photographs and specimens of the plants to Mr. Jack Whitehead of Berkeley for his opinion, I am pleased to say that he agrees with me in much of my findings, and it is through his kind co-operation that I am able to include the following condensed description which he kindly prepared for me:

Sedum confusum Hemsley

(Hemsley, Britton & Rose, Praeger, Berger, l.c.)

A subshrub, 25-60 cm. high. Leaves short-spurred, subspathulate-ovate, 20-40 mm. long. Inflorescence small, loosely corymbose, about 5 cm. long. Petals free to near the base, oblong, sub-obtuse and short-mucronate, 4-5 mm. long; stamens 3.5-4 mm. long, the epipetalous inserted about 0.5 mm. up. Scales subspathulate-quadrate, about 0.5-0.6 mm., yellow. Carpels slightly spreading, 3-4 mm. long. Seeds subovoid, smooth, 0.8 x 0.5 mm.

Known only from English garden specimens, and described in 1878 by Hemsley from English gardens. Closely allied to *S. dendroideum,* but lower in growth, and with smaller inflorescence and flowers.

FROM NEW YORK

Noting Miss Helen C. Dorne's letter in the July JOURNAL, I would like to say that the question she raises about selling her surplus stock without losing her amateur standing is one that often comes up in our garden clubs. I believe the State Federation finally decided that a person selling surplus stock on a small scale and who is not in the nursery business is still an amateur.

With high taxes and the many requests for donations to help nearly every country in Euorpe, one needs a bit of "pin money" to spend on new plants, one might not otherwise afford.

Speaking of buying plants, salesgirls don't know anything about the care of plants and I often take the liberty to tell them which plants need the most water. One salesgirl asked me why *Sempervivum arachnoideum* had cobwebs on it and told me of a woman who refused to buy the plant because of them. Finally the customer accepted a plant after the salesgirl had picked off all the cobwebs! That was in New York City where a poor little spider hasn't a chance and neither has an artificial web!

I don't suppose you have ever thought that some people save pictures of plants and flowers. I happen to be one and have thousands of these pictures arranged (pasted) in loose leaf note books, alphabetically according to the botanical name. All parts of one species that I can find, sometimes several pages are given over to pictures of various parts of one plant. Now, why I have mentioned this is because so often in the JOURNAL there will be pictures back to back when often one of the pictures could be on the next page. It is hard, sometimes, to choose which picture to keep.

I have found this picture encyclopaedia most useful and when anyone wants to know what a certain plant looks like I can nearly always produce a picture of at least part of the plant.

It's a lot of work, of course, but what isn't work that is really worthwhile?

MRS. R. M. GUNNISON.

FROM CINCINNATI POST

The lovely night-blooming cereus must be given a shady location and plenty of water if you do not want the buds to drop before they open. Keep in mind the hot and humid jungles of South America where this type of cactus hangs from a fork in a tree and receives only morning and evening sun.

Be sure the soil mixture consists of one part old leaf mold, one part good loam and one part sand. No additional lime for the night-blooming cereus, but one tablespoonful to a four-inch pot for such cacti as grow in the alkaline regions of our southwest.

The prickly pear . . . a species of cactus plant growing in the United States, Mexico and South America, is continually destroying . . . two acres of land . . . per minute.

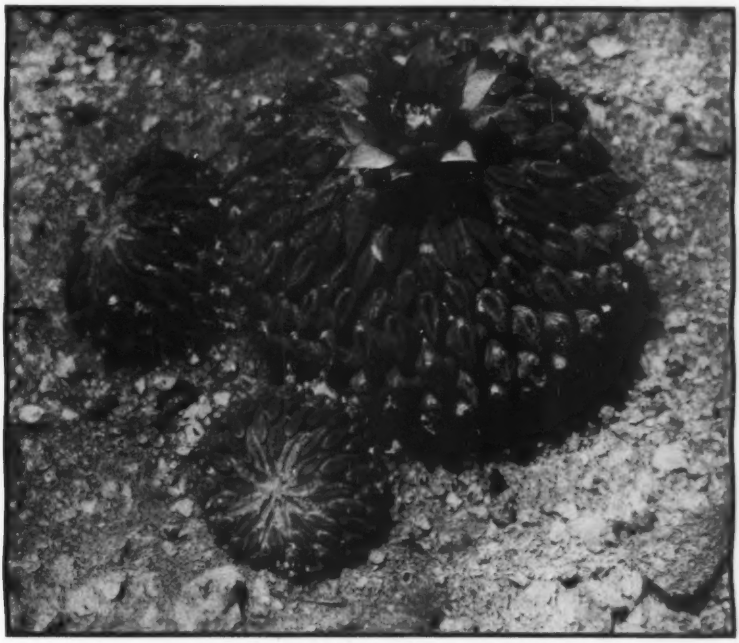

FIG. 89. *Pelecyphora aselliformis,* nat. size.

Pelecyphora aselliformis, Ehrenb.

One of the most interesting of cacti and well-known under its popular name, Hatchet Cactus. The generic name *Pelecyphora,* meaning hatchet bearing, was given from the appearance of the laterally compressed tubercles.

The following account of the plant is taken from Cactaceae of N. E. and Central Mexico, by W. E. Safford, (the Smithsonian Report for 1908).

"*Pelecyphora aselliformis,* usually growing in clusters, derives its specific name from the resemblance of its tubercles to the ventral surface of certain isopods, or sow bugs (Aselli). Specimens were collected by Dr. Edward Palmer in May, 1905, at Zapotillo, 12 miles east of the city of San Luis Potosi, where the plants are sold in the drug market under the name of "peote," "peyote," or "peotillo." Another locality where they are found, and which takes its name from them, is the Hacienda de Peotillas, a station on the Central Railway, which connects San Luis Potosi with Tampico. One of the specimens collected by Doctor Palmer bloomed after it had been gathered. The flower is comparatively large and of a magenta or crimson-purple color, with the outer petals rose-colored and paler on the margin, and the outermost sepal-like, narrowly linear and greenish white. The stamens are only about one-third the length of the petals; they have white filaments and orange colored anthers, beyond which the pistil projects with its greenish-yellow 4 rayed stigma."

While it is mentioned by Britton and Rose as not doing well in cultivation, this plant seems to be quite happy when grown in the rock garden in Southern California.

"CONVENTION SPECIAL"

The Cactus and Succulent Club of Chicago issued a special bulletin under Vol. I, No. 7. The Editor, Frank Kranz, assembled many interesting articles:

Club News, by Myrtle Akins.
The Musings of a Cactusist, by Edwin O. Martinek.
Cacti and Succulents in Landscape, by Frank Kranz.
Desert Scenery, by Cactus Joe.
Mealy Bugs, by G. S. Daston.
Building a Cactus Collection, by Mrs. P. L. Akins.
Propagating Cacti From Seed, by Robert T. Van Tress.

We plan to reprint some of these interesting notes in future JOURNALS.

CACTUS IN THE ATTIC

By CLARENCE L. SCHMUTZLER

Each spring it gives me great pleasure to move my large collection of cacti (over 300 specimens, representing 275 species) to their outdoor location. This "Desert Garden" offers a more familiar abode to the plants which have been confined to the attic during the past six and one-half months. Moving time is usually completed within the last week of April or the first of May. By the middle of October all plants except a few hardy specimens are ready to be moved once more to their winter quarters. Nearly all of my cacti and a few succulents are kept in the attic, and about eighteen to twenty-five are placed in the basement. Thus, it requires a full day's work to transfer the plants from one location to another.

The average temperature in the attic during the winter months ranges from 40 degrees to 55 degrees. When the thermometer goes down to 10 degrees or more below zero outdoors, the thermometer in the attic registers 32 degrees (freezing point).

The collection is placed near the south and east windows. As there are four dome windows, one in each direction, plenty of light is admitted giving the plants the daily ration of sunshine and light so necessary to them. The plants are placed in such an order that the spines of one plant will not penetrate those of another.

As the attic is very dry the cacti must be watered about once each week. However, during my absence they did not receive water for approximately six weeks, yet only two or three showed signs of drought. Rain water is used to water them. A small sprinkling can with a long extension nozzle will enable one to reach all plants. I have placed heavy papers and a covering of oil cloth on the floor so that no water or moisture can penetrate any of the ceilings below.

The loss of specimens is not great. An average of two or three plants out of every one hundred is lost each year. This is usually due to rot or desiccation. I have found that Echinocereus and some of the Coryphanthas are the most subject to decay and dryness.

Some years ago an unexpected test was made. At that time we were having very cold weather. It was about the middle of October, and time to move the cacti to the attic. As it happened a cold snap caught my cacti out in the garden. It became very cold. I placed a thermometer and a dish of water near the plants. Next morning I saw that the water had turned to ice and the thermometer registered 17 degrees, but to my great surprise I found that none of the plants were frozen. At another time the thermometer registered 22 degrees, just 10 degrees below freezing—high time to move my cacti! Why did these cacti not freeze? I believe that had these same plants been out in the open all would have been severely damaged or frozen, but as they were under the protection of the glass roof they received what is termed as "dry cold." Out in the open it would be termed "damp cold" which is killing to all vegetation. In the southwestern and western states we find that the dry cold atmosphere prevails, hence, we know that cacti in such regions can stand more cold than the cacti in "damp cold" regions. Before this unexpected test was made I could not be certain as to how much cold they can resist, so I hesitated to place them in a cold attic. When the temperature outdoors is 20 degrees to 35 degrees below zero, the temperature in our attic may be only at the freezing point or a little below—it would never drop to 15 degrees below freezing. Thus, I have assurance that my cacti are safe.

My winter display in the two windows of the attic is made quite attractive. It has the appearance of a dense jungle-like view. As the window is at the extreme end of the dome project part of the attic, I can place many pot holders on each side and have two extra shelves at the bottom. All the rest of the cacti are placed either on the floor or in a fernery. At least all plants are easy to reach when they must be watered. This arrangement makes an attractive winter display and visitors may be asked to see the garden during the cold months of the year.

Nearly all of the cacti remain in sort of a dormant condition during their resting period. However, a few show signs of activity, such as the *Zygocactus truncatus* (Christmas Cactus) which at the approach of Christmas is getting full of buds. When this is noticed the plant is taken down to a warmer location where the buds will develop and the flowers bloom sooner. In the very early spring *Parodia chrysacanthion* shows signs of getting buds, and before long beautiful golden yellow blossoms appear on the top of this rare specimen. Then another of the jungle cacti, *Schlumbergera Gaertneri* (the Easter Cactus) is ready for a grand display. Last year it blossomed at two different times, each time producing beautiful flowers. The little *Rebutia minuscula* also blooms at this time, with its buds peeping up from below the body of the small plant, forming a crimson crown capped with the green body of the plant itself, and making a lovely sight. Among the spring blooming specimens are the Echinocerei and some of the Ferocacti.

As the attic is quite large the weekly wash is usually hung there to dry. Each Monday a door below is left ajar, thus admitting some of the heat below, much to the advantage of my plants.

I have had very little trouble with insects. When I repot or plant new specimens, I make a mixture of good soil, coarse gravel, sand, leaf mold at times, lime, and tobacco dust or a broken piece of tobacco (stem or leaves). A good drainage must be made at the base of the plant with small stones or broken bits of pottery. I find that using tobacco mixed with the soil or placed near the top of the soil causes the mealy bugs to disappear. Crushed moth balls help in keeping the spiders and ants away during the summer months, and I find that a small amount of ground red pepper placed in the trail of snails is effective. The hungry cut worm may be kept at a distance by placing a poison mash in his path. The cut worm usually makes his raid at night and when damage is discovered in the early morning, he may be found within one-half foot or closer to the plant. It is best to remove them so that no more raids may follow the next night and more damaged plants be the result.

I sincerely hope that some of my experiences during the past ten years may be of help to other cactus collectors.

CLARENCE L. SCHMUTZLER
Watertown, Wisconsin.

CACTUS HEDGES

Dr. Hans Zinsser of the Harvard Medical School and author of several authoritative 'best sellers' speaks of cactus in his delightful autobiography "As I Remember Him:" (Little Brown & Co.)

"Flaubert once came to Tunis for local color when he was writing SALAMMBO. As a result, he put American cactus hedges into ancient Carthage. As a matter of fact, these were not brought to North Africa until the time of Maximilian's adventure in Mexico. Now the cactus borders all the roads, and the wandering Bedouins live on cactus pears when they can't get anything else." JIM.

IF YOU CARE FOR CACTUS

By CLAIRE NORTON

If you care for cactus you will want a desert nook or corner somewhere in your garden. And if you have a sunny, dry slope or terrace to go with your love of cactus, you are fortunate. Build a rockery there, plant a representative group of plants which require or tolerate just such a situation and call it—a desert garden.

Contrary to general belief, do not put the hardest, driest, sandiest soil you can find into your desert garden. The compost may be the ordinary sandy loam of the rock garden, but it must be good soil, thoroughly well drained. If it can contain some humus, so much the better.

The first requisite in desert plant culture is thorough drainage, particularly in localities where heavy rainfall is the rule. If a well drained, sunny slope or terrace is not available, a practicable bed may be constructed by removing the soil from the chosen plot to a depth of eighteen inches or two feet. A substratum, several inches deep, of broken pottery or tile, rocks or clinkers, and coarse gravel is then built in, followed by a thin layer of sharp sand, upon which the growing compost is returned.

Where the surface soil is inclined to clay or has been manured within the past few years, it is better to replace it with a mixture of two parts washed sand, equal parts black loam and granulated peatmoss, together with a small amount of powdered limestone and pulverized charcoal. Because of the proneness of cactus to attack by fungus growths, use of animal manure or rotting vegetation should be avoided. As an added precaution, for this same reason, the soil mixture might be treated with a good commercial disinfectant.

In returning the soil upon the bed, a gentle slope toward the path or walk will be found to augment both drainage facilities and beauty. A further addition of sizeable rocks in the naturalistic arrangement will give your desert plants more the appearance of being at home, of belonging. After the plants are in place, a top dressing of sand or fine gravel is beneficial, though not essential. And remember, Nature never overcrowds her desert garden; moderation in distribution of the plants will be rewarded.

Although desert plants should be kept on the dry side, because of the prevalence of rot during prolonged dampness, they must never be neglected and left to die of thirst. This is especially true during their growing and blooming seasons, for it is then, in their native environments, that the rains come. However, it is well to provide your plants with a good drink occasionally in the evening or during cloudy weather, rather than a daily sprinkling that will expose them to scalding by the sun. As autumn approaches, allow the bed to dry off gradually that the plants may enter winter inclemancy in a fully ripened condition.

Whether or not your desert plants survive over winter if you live in a climate of extremely low temperatures depends largely upon the care they receive at this season. Frost is as great an enemy to those hailing from hot, dry regions as is dampness. If winters are severe, a covering for the larger cacti will probably be necessary. Smaller plants may be brought into the house, thus serving a double purpose. If these are potted and the pots plunged in the ground through the summer, the task of moving will be greatly facilitated.

If you care for cactus and plants of desert association, you will find fascination in developing a desert garden. You have such a wide choice of material; some of it fantastic, some of it beautiful, all of it interesting. Plant first a goodly collection of cactus.

Members of the Cereus group and some of the Opuntias and Ferocacti are best representatives of the cactus tribe for bold background effects. A number of columnar cacti come from across the Mexican border and from South America. The Southwest offers several adaptable species of native Cereus.

The Opuntias contribute the Cane Cactus of somewhat raggedly-branched, tree-like habit, near kin to the fierce Cholla. Beware of planting these in positions where it would be necessary to brush against them while cultivating others. But they do have something to add to the garden as background subjects. Hardy *Opuntia arborescens,* occurring as far north as central Colorado, is showy with its purple flowers, followed by brightly colored fruits. Of the Opuntias with jointed pads, *O. ficus-indica,* the Indian Fig, and the Tunas are quick growing and may be used in this position.

Other representatives of the Prickly Pear, or Opuntia tribe, you will select to fill accent positions in the foreground of your desert garden. *Opuntia basilaris,* for example, has gray-green joints of wrinkled appearance, sometimes touched with rose and purple. Its flowers of brightest magenta flaunt their beauty along the upper margin of the pads. *O. santa-rita* is beautiful in pink and purplish tones, while the lobes of *O. macrocentra* show blue, purple and pink in their colorings. *O. microdasys* is called Golden Plush Cactus because of its shining golden clusters of glochids. Familiar natives of the west

and midwest are *O. humifusa, O. fragilis* and *O. polyacantha.* The silky blossoms of these vary through shades of yellow to red. Find a place for the Grizzly Bear Cactus, *O. ursina,* distinctive with its dense covering of long, flexuous, hair-like spines.

Any of the Visnagas, or so-called Barrel Cactus, are a beautiful sight when in bloom. *Ferocactus viridescens* and *F. Johnsonii* are especially worthwhile. The Devil's Pincushion, *Homalocephala texensis;* the Niggerhead, *Echinocactus polycephalus;* and the Mexican Flame Ball, a species with stout spines of fiery red, are all specimens you will want.

In the lee of the taller plants, such smaller members of the cactus family, popularly known as Lace, Rainbow and Ball Cactus, are contentedly at home. Some of these are nearly a foot high, while others will almost hide among the rocks. You will surely plant *Echinocereus mojavensis* with its glorious rose-purple flowers; *E. rigidissimus,* blooming a clear, beautiful pink; *E. conoideus,* a velvety red; *E. viridiflorus,* lemon-scented; *Mammillaria vivipara,* lovely purplish-pink; *Echinocactus Simpsonii,* round with a crown of rose-pink; *Mammillaria dioica,* of the creamy-white flowers; *Coryphantha deserti,* the Foxtail Cactus; and *Echinopsis oxygona,* the Hedgehog Cactus, with dark pink, frilled flowers.

For those specimens to fill the very special places, why not *Cephalocereus senilis,* Old Man Cactus, with its long white silky hairs resembling a beard, and the rose colored flowers and violet fruits; or *Mammillaria hahniana,* the Little Old Lady; or *Mammillaria candida,* which has stiffer white spines? Then there are the living rocks, *Ariocarpus fissuratus* and others, which resemble grayish rocks until they burst into blossom with dainty pink flowers.

You can, of course, devote your desert garden entirely to cactus, but you can add much of interest by association with the cactus of low shrubs, herbaceous perennials and annuals, and bulbs which prefer or tolerate a hot, dry situation. Among such shrubs for use in the formation of a background are the *Amorpha nana, Artemisias, Caragana aurantiaca, Lycium pallidum, Rhus trilobata* and *Rosa stellata.*

The shrubby, evergreen Yuccas will receive first consideration for the central portions of the desert garden. The common yucca of the plains, *Y. glauca* is desirable, as also are the species *Y. filamentosa, Y. baccata, Y. glauca rosea* and *Y. harrimaniae.*

Of herbs suited to planting in the intermediate stages and foreground mention may be made of the orange Mariposa Tulip (*Calochortus kennedyi*), the Sand Verbena (*arbronia*), Spotted Mallow, Evening Primroses (*oenothera*), the succulent Ice Plant, Desert Coreopsis, the spring blooming Sand Lily (*Leucocrinum montanum*), and Gayfeather (*liatris*). *Gaillardia, aubretia, alyssum, iberis* and *thymus,* familiar in the border and rock garden, thrive equally as well where they receive but little water and much sun.

California poppies delight in a hot, dry position, and now are obtainable in a wide range of color. *Ursina anthemoides* is a little known annual, easy to grow. Plant it with the blue-flowered *Heliophila leptophylla.*

No garden of this type would be quite complete without representatives of the Aloes, Agaves, Fig Marigolds, Sedums and Sempervivums. From Mexico comes an intriguing clan of succulents under the name of *Echeveria,* but these are not always hardy, and so must be selected with discretion.

Silver Plume, Colorado.

SUCCULENT ARTICLES

The request for information on cacti publicity noted in the July JOURNAL made me feel that there may be an interest in the results of some of our efforts along the line of collecting pictures and articles on cacti and succulents.

My husband does not share my interest in working with the cactus collection. He much prefers to spend his spare time browsing around second-hand book stores where his interest is just as intense as mine is for my hobby. In his haunting of the bookstores he has spent many, many hours looking through countless hundreds of magazines. As a result of this searching I am able to compile a list of pictures and articles that I have on cacti and succulents. We also have additional dates of various magazines in which cacti material should be found and for which he will continue to search.

I feel that it would be rather selfish not to share with fellow cactophiles this information we have gained. There may be others who would like to collect these articles and pictures and a list as we have, would be of a great deal of assistance. Second-hand book stores and attics are the source of supply.

It is very pleasant to notice in reading these cacti articles back through the years what a wonderful work of educating has been done by the Cactus and Succulent Society. The more recent ones all have the correct scientific names and the way the articles are written show the good influence of the Society's teachings.

The following is a list of the material I have in my cacti library as gathered from magazines and papers:

National Geographic, pictures, January, 1915, July, 1916, January, 1924, September, 1925 (especially good, some in color).

The American Weekly, July 13, 1941, page 6. Magazine section of certain Hearst's newspapers, "Sent to an Artificial Paradise by the Evil Cactus Root."

Saturday Evening Post, April 26, 1941, page 22, "The Desert Shall Bloom" by A. L. Rand and L. J. Brass. Color pictures and articles.

Life, April 7, 1941, page 56, color pictures, "Strange Blooms Brighten the Desert," page 57, girls dressed in cacti, 'Strange are the Uses of the Desert Blooms."

Life, July 28, 1941, page 86, several pictures of Night Blooming Cereus.

U. S. Camera Magazine, Autumn issue, 1940. Pages 39, 40, 41. Excellent cacti pictures.

Flower Grower: Articles and pictures.

January, 1934, "Winter Care of Cacti," Ladislaus Cutak.

July, 1934, "Exotic Color in a Cactus Garden," Vesta Crawford.

March, 1935, "The Sahuaro—Giant Cactus," Robert Roat.

July, 1935, page 304, "When the Desert Blooms," Will C. Barnes.

August, 1937, page 369, "Desert Gardening," Heathcote Lee.

January, 1939, page 24, "Fascinating Cacti," E. R. Abbe.

October, 1939, "A Greenhouse on the Roof," E. R. Abbe.

May, 1941, page 234, "The Orchid Cactus," Joseph S. Daston.

American Home: Pictures and Articles.

August, 1935, "Between Dusk and Daylight," Donna Ashworth.

July, 1937, 'I Give You a Stone," Rose Batterham.

February, 1938, "Plants That Mimic Stones," H. A. Cott.

December, 1940, 'Here's an Entertaining Story," Robert L. Clark (about using cacti and succulents as flower arrangements.)

Nature Magazine:

June, 1924, page 364, "The Giant Cactus or Sahuaro," Anna Botsford Comstock.

July, 1924, page 45, "The Cholla, the Pest of the Desert," Anna Botsford Comstock.

December, 1925, page 351, "Beside the Desert Trail," Arthur Newton Pack.

November, 1926, page 293, "Denizens and Dwellers of the Desert," Ernest McGaffey.

June, 1929, "The Sahuaro's Shame," O. R. Philip, poem and picture.

February, 1930, page 99, "Our Vanishing Cacti," Marian McLean Finney.

February, 1931, page 112, "The Barrel Cactus," Vernon Bailey.

September, 1932, page 112, "Hardy Cactuses," Fannie M. Heath.

November, 1932, page 211, "Cactus Pearls," Isabel Hemenway.

December, 1932, "Spiny Foster Mothers," Indian Miller.

December, 1934, page 251, "A Desert Nature Trail," Julia P. Ruopp.

January, 1935, pictures, Sahuaro and Night Blooming Cereus in Bloom.

December, 1935, Picture, "Children of the Desert," Wright M. Pierce.

January, 1936, "Oklahoma Cactuses," Marion Sherwood Lahman.

March, 1936, "Flowering Stones of Karoo," Allen H. Wood, Jr.

July, 1936, page 23, 'The Bishop's Cap Cactus," E. C. Hummel.

February, 1937, pictures, "Queen of the Night," Gerald Leslie.

October, 1937, page 207, "Mexico—Land of the Cactuses," E. C. Hummel.

September, 1937, page 155, "Peyote and the American Indian," Richard Evans Schultes.

January, 1938, "They Never Say Die," (Bryophyllum) Henrichs Hodge.

March, 1938, page 137, "To the Land of the Cirio," Charles Shelton.

March, 1939, "Giant Cactus of Lower California," Pictures by Laurence M. Huey.

Better Homes and Gardens:

October, 1925, "Carpets of Flowers" (Mesembryanthemum), Janet Gargan.

February, 1931, "The Appeal of Cactus," Ethel H. Higgins.

November, 1931, "When Rocks Come to Life in Color," pictures by Fidelis Harrer.

May, 1932, "In Praise of Hen-and-Chickens," (sempervivums) Fleeta Brownell Woodroffe.

August, 1932, "Dream Flowers" (Echeverias), George Elwood Jenks.

May, 1933, "Sing a Song of Sedums," Fleeta Brownell Woodroffe.

November, 1935, "Cactus—the Armed Beauty," A. C. H.

February, 1936, "I Get a Kick Out of It," C. F. Greeves-Carpenter.

February, 1936, "Live-forevers are Joy-forevers," Lillian Hughes.

January, 1938, page 16, "Here's a Hobby You Can't Touch," Margie Miller Lewis.

February, 1939, "Cactus in Snowland," Mildred and Gordon Gordon.

Sunset:

September, 1939, page 20, "Cacti Aren't Just Prickly!"

Garden and Home Builder:

March, 1928, page 57, "An Everblooming Cactus From Texas," Cyrus N. Ray.

American Forests:

December, 1938, page 542, "Desert Christmas Trees," A. Dell Roensch.

Travel:

October, 1936, page 13, "Plants That Defy Drought," E. Richmond Thomas.

June, 1938, page 17, "Flowering Wonders of the Desert," Oren Arnold.

The House Beautiful:

March, 1931, page 254, "Cactus Enchantment."

Mechanics and Handicraft:

March, 1936, page 42, An article about the Cochineal Industry. MRS. P. L. AKINS.

FROM EUGENE, ORGEON

We find that those who live in districts not dependent upon our city water supply, have more robust plants and I firmly believe the water is more important than any other one factor. Our city systems use so much chemical for purification. Does anyone else experience the same trouble?

EDITH MOSHER, 1995 Harris, Eugene.

A NEW MONOGRAPH

With the monograph on Euphorbias nearing completion, we can announce that it will be ready for delivery before Christmas. The name of this two-volume edition is "The Succulent Euphorbieae of Southern Africa," by Messrs. White, Sloane and Dyer. Besides twenty-six color plates, there are over 1000 valuable photographic illustrations—an average of more than one picture to a page!

The authors have worked diligently ever since the Stapelia monograph was completed several years ago. Dr. Dyer worked in the field in South Africa, Mr. Sloane built up an enviable collection of Euphorbias in California, where he made descriptions and photographs of the material, and Mr. White compiled the mass of information at his home in South Carolina. How these three authors accumulated the material so efficiently and thoroughly is a story in itself. Through their efforts, this monograph, we can truthfully say, becomes another of those valuable contributions to science that lives forever.

FIG. 90

The book has an elaborate key to the species treated, covering some 25 pages. To the authors this was probably all simple and clear, as the key in this cut doubtless was to its maker, but the reader may at times find it shrouded in some degree of mystery. We wouldn't know!

EDITORIAL

There has been criticism that the JOURNAL is not up to its standard of five years ago. Evidently reference is made to the lighter or less scientific matter which we decided to use in hopes that a greater number of readers could understand the JOURNAL. During these five years this change of policy has not increased the membership, which may still be due to the fact that the JOURNAL is neither all scientific nor all unscientific in its material. Perhaps, to be successful, the editorial policy must be one or the other, with no halfway compromise.

It seems that the loudest in their criticism are those who ask for more scientific material. Yet these same critics are the ones who are best qualified to contribute the type of material for which they ask. We may well revert the question to them by asking, "How long has it been since you have written for the JOURNAL?"

How true it is that we miss such writers as James West, Dr. Houghton, Eric Walther, G. A. Frick and a score of others who used to supply the JOURNAL with an abundance of fine articles. Now, dealers are all too busy, and with but a few exceptions, these former writers have never been replaced.

In order that you may have a better understanding of what it takes to produce a magazine, I should like to quote some figures. Take the August issue, for instance, the cost of which can be broken down as follows: paper, $25; cuts, $70; printing, $106; envelopes, mailing and postage, $17. These figures show that the JOURNALS cost about $2600 a year, plus $720 a year for secretarial costs. Those of you who are further interested may compare these figures with an annual income from the JOURNAL amounting to $2400!

Between now and 1942 we will give the membership an opportunity to show their interest in their JOURNAL, of which every member is on the staff (See page 2 of every JOURNAL). Let us have some of the material that you used to enjoy. And this, combined with the Amateur Series, which starts this fall, should give us a magazine that will boost its membership to new high levels.

SCOTT HASELTON.

NOMINATING COMMITTEE

The following members were elected to serve as the Nominating Committee for the 1942 officers of the Society:

FRANK MARK, *Chairman.*
825 Elyria Dr., Los Angeles.
CAPT. S. D. MILLER, Long Beach.
MRS. MAYBELLE PLACE, Los Angeles.
MRS. FRANK CARISS, Los Angeles.

Affiliated groups may send in their nominations, and each member will have the opportunity to vote for those nominated or to write in their own selection.

The Nominating Committee will report at the Annual Meeting, which will be held at R. W. Kelly Nursery, 2410 La Rosa Dr., Temple City, on Oct. 19, 3 p. m. The Southwest Cactus Growers, the Cactus Exchange, the Long Beach Cactus Club, and San Gabriel Valley Cactus Club are invited to meet with the Society. Convention movies will be featured.

STRANGE FACTS

Some of our collectors have been proudly exhibiting for the past year what they considered was a very fine type of monstrous growth on their aloes. Imagine their disappointment when they learn that this is caused by an aloe wart mite, called *Eriophyes aloinis* Keifer.

This is a new pest, just having been named in May of this year by H. H. Keifer, Entomologist at Sacramento, and every effort should be made to eradicate it by cutting out and destroying the affected parts. After the cuts are calloused over, spray with any good oil emulsion several times, at intervals of a few days. The mite develops from egg to adult stage in from 8 to 15 days.

Adult females are only about 1/5 mm. long and their presence can best be recognized by the damage they cause to both the leaves and flower stalk as shown in the above picture. Fortunately, this mite attacks aloes only, so far as it is known, according to the State Dept. of Agriculture. F. R. M.

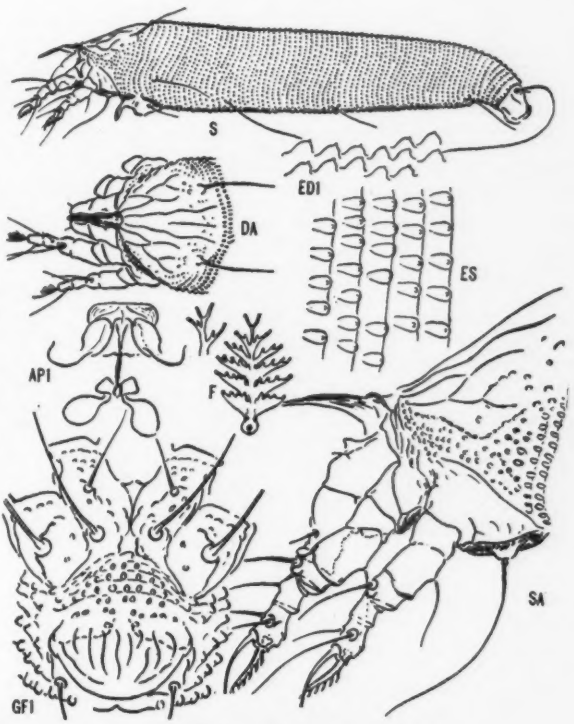

FIG. 91. Greatly enlarged sketches from the State Dept. of Agriculture Bulletin.

Plate 160, *Eriophyes aloinis* n. sp.

FIG. 92. Aloe infested with the aloe wart mite called *Eriophyes aloinis*. Haselton photo.

SPECIAL THIS MONTH, $1 POSTPAID

Choice of any 3 of the following Euphorbias:

6 in. *E. candelabrum*	6 in. *E. lemairiana*
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Our cacti price list now ready for distribution. Some very attractive offers. Over twelve years in the business. Wholesale and retail. Drop us a card for our price list. Supplements of special offers added from time to time.
A. R. DAVIS
P. O. Box 167, Marathon, Texas

ANNOUNCEMENT—Having acquired the entire reprint of *The Cactaceae,* the 4 Vol. reprint of Britton and Rose, I wish to announce that the small sets are no longer available, but that the large Deluxe sets may now be obtained from me at the new, low, cash price of $50.00 postpaid in U. S. A.

WANTED—Engelmann's *Boundary Survey—Kaktus A. B. C.—Trees and Shrubs of Mexico* (5 vols.), Odd Vols. Britton and Rose (original), old copies of the *Journal* or *Desert* or any Cactus or Succulent books or catalogues. Send me a list of what you wish to dispose of.
FRANK R. MARK, 825 Elyria Dr., Los Angeles

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We do not attempt to edit the names of plants appearing in the advertisements.